1017-119 **Cardiac Resynchronization Reverses Left Ventricular Remodeling and Reduces Cytokine Activation in Patients With Dilated Cardiomyopathy and Left Bundle Branch Block**

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In patients (pts.) with advanced heart failure (HF), dilated cardiomyopathy (DCM) and left bundle branch block, cardiac resynchronization (CR) and appropriate medical therapy improves patient HF symptoms, quality of life and ability to exercise. The purpose of this study was to evaluate the effect of CRT on cardiac structure, function and neurohormones. METHODS: Pts. with HF (NYHA II/III/IV), DCM (left ventricular end diastolic dimension > 55 mm), and ventricular conduction abnormalities (QRS duration ≥ 140 ms) were implanted with an atrial-synchrounous, bi-ventricular pacing system. Atrial-ventricular delay was optimised by Doppler echo (longest left ventricular filling time and greatest cardiac output). NYHA class, QRS duration, six minute hall walk distance, quality of life score, echocardiogram and plasma neurohormones were evaluated at baseline and following 3 mos. of therapy. RESULTS:

	N=25 pts. (22m, 71 ± 9 yrs.)	Baseline	3 month	p-value
Patient Outcomes	NYHA	2.68 ± 0.75	2.08 ± 0.83	< 0.001
	QRS duration (ms)	178 ± 29	148 ± 19	< 0.001
	6-Minute Hall Walk (m)	232 ± 163	317 ± 117	0.009
	QoL	38 ± 20	18 ± 16	<0.001
Echocardiography	LVESVi	121.4 ± 51.1	102.0 ± 52.1	0.032
	LVEF (%)	30.1 ± 7.6	37.1 ± 9.6	<0.001
	CI	2.03 ± 0.68	2.28 ± 0.56	0.012
	IVMD (ms)	41.2 ± 23.7	14.3 ± 10.9	0.001
	LV MPI	1.07 ± 0.53	0.79 ± 0.51	0.007
Neurohormones	IGF-1 (ng/ml)	96.7 ± 38.9	118.5 ± 43.6	0.012
	TNF-α (pg/ml)	0.018 ± 0.010	0.017 ± 0.010	0.308
	sTNFR1 (ng/ml)	1.26 ± 0.49	1.19 ± 0.57	0.306
	sTNFR2 (ng/ml)	6.82 ± 2.65	5.98 ± 2.31	0.011

Correlations were found between soluble TNF-α R2 and QoL (r^2 = 0.166, p=0.048) and soluble TNF-α R1 and LVEF (r^2 = 0.273, p=0.009). CONCLUSIONS: CRT improves pt. outcomes and appears to reverse some of the adverse effects of heart failure, related to cardiac structural changes and augmentation of the cytokine systems.

1017-120 **Reduction of Norepinephrine Levels With Biventricular Pacing but Recurrence of Arrhythmic Events in Patients With Biventricular-ICD and Cardiomyopathy**

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It's known that CHF activates the sympathetic nervous system(SNS) and increases serum norepinephrine(NE)in direct proportion to severity of the disease.Emerging data support the use of biventricular pacing(BP)in severe cardiomyopathy(CMP)with reduction of NE levels in follow-up.However if it's real that BP is a promising modality for CHF with LBBB,it's not demonstrated the relation between deactivation of SNS with BP and arrhythmic events(AE)in idiopathic CMP.The aim of the study was to test if the reduction of NE after BP can produce a reduction of VT or VF in pts with idiopathic CMP.METHODS:we enrolled 43 with CMP,LBBB,normal coronary system,maximal medical therapy,spontaneous sustained VT or VF(8pts underwent to ICD)without beta-blockers.We then randomized 20 pts to BP(Medtronic Insync),15 pts to medical therapy and 8 pts to BP-ICD(Medtronic Insync-ICD).In all pts we performed at baseline and after 12 weeks ejection fraction,NE levels and ICD check at 4 and 12 weeks after implantation.All values were expressed as mean ± standard deviation (SD). CONCLUSIONS:in pts with BP or BP-ICD we observed a significant improvement of EF and a marked reduction of SNS activation but all pts who underwent to BP-ICD have VT or VF in follow-up with correct shock by device;4 pts with BP get to sudden death after 4 months.Then we conclude that BP can decrease the NE levels but the deactivation of SNS can't reduce the rate of arrhythmic events in this kind of population and can't reduce the need of antitachycardia devices.

SD(sudden death);VT(ventricular tachicardia);VF(ventricular fibrillation)

	NE(Baseline)		NE(12 wks)
Group I(28 pts:BP and BP-ICD)	600 ± 328 pg/ml	p<0.05	330 ± 130
GroupII(15pts:medical therapy)	570 ± 302 pg/ml	NS	605 ± 260
	AE(1-3 mth)		AE(4-6 mth)
Group I(20pts:BP)			4 SD (20%)
Group II(8pts:BP-ICD)	6 VT and 2 SD (100%)		
Group III(15pts: medical therapy)			1 SD and 2 VT (20%)

POSTER SESSION

1018 Implantable Cardioverter Defibrillator Therapy: Optimal Utilization

Sunday, March 17, 2002, 9:00 a.m.-11:00 a.m.
Georgia World Congress Center, Hall G
Presentation Hour: 10:00 a.m.-11:00 a.m.

1018-107 **Performance of a Supraventricular Tachycardia Discrimination Algorithm by an Automatic External Cardioverter Defibrillator in Response to Induced Tachycardia**

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Background: An algorithm with three features (Modulation Domain Function, Waveform Factor Analysis and Signal Variability Analysis) is used as a programmable option in an Automatic External Cardioverter Defibrillator (AECD) (Powerheart) to differentiate Supraventricular Tachycardia (SVT) from ventricular tachycardia or ventricular fibrillation within a programmable SVT rate zone. The AECD will withhold therapy delivery in response to tachycardia that is recognized as SVT within that zone and recommend (advisory mode) or deliver therapy (active mode) for faster rates.
Methods: During routine diagnostic electrophysiology studies of 67 pts [Age: 61 yrs (Range 21-92), LVEF: 41% +/- 17%, Males: 39, Bundle Branch Block (BBB) 7], SVT was induced in 25 pts and the AECD then programmed with a detection rate that would result in this tachycardia being within the SVT zone. The advisory mode of the AECD was used to prevent actual therapy delivery. Bipolar right atrial pacing to mimic sinus tachycardia was also tested in an identical fashion in 55 pts.
Results: A total of 31 clinical SVTs were induced [Atrial Tachycardia 8, Atrial Fibrillation 5, AV Reentry 10 and AV Nodal Reentry 8]. Rate detection was accurate in all episodes (Sensitivity 100 %). There were 25 True Negatives, 3 True Positives (episode rate exceeded the SVT zone), 3 False Positives (2 tachycardias with BBB, 1 inducible AV Nodal Reentry Tachycardia with ST segment elevation). Of the 55 right atrial pacing episodes there were 53 True Negatives and 2 False Positives (1 prolonged pacing PR interval with summation in the preceding QRS and 1 with BBB). (Specificity 94%).
Conclusions: This AECD SVT discrimination algorithm functioned extremely well in response to a wide variety of tachycardias (particularly in the absence of BBB) and would be expected to very rarely result in inappropriate suppression of therapy delivery.

1018-108 **The Utility of Dual Chamber Electrogram Recordings for the Diagnosis of Clinical Tachycardias**

Michael H. Kim, David Bruckman, Christian Sticherling, Frank Pelosi, Bradley P. Knight, Hakan Oral, Fred Morady, Adam Strickberger, *Evanston Northwestern Healthcare, Evanston, Illinois, University of Michigan, Ann Arbor, Michigan.*

Background: The availability of the dual chamber defibrillator has allowed the assessment of device performance of various tachycardia discrimination algorithms. Very little data, however, exist about the clinical interpretation of a tachycardia episode on the clinician level in regard to the utility of an atrial electrogram recording and its impact on the correct diagnosis and confidence of that diagnosis. Methods: Dual chamber defibrillator recordings (n=52) with a clear diagnosis were distributed in a blinded and randomized fashion to 5 electrophysiologists, initially with only the ventricular data (Test V) and later with both the atrial and ventricular data (Test AV). The 52 matched pairs of recordings were analyzed with a McNemar's test to determine overall accuracy of diagnosis. Reviewer confidence in the diagnosis via a 5-point Likert scale was assessed with an analysis of variance. Logistic regression determined the relationship of confidence and diagnostic accuracy. Results: Overall accuracy for the specific diagnosis in Test V was 60.8% and 79.2% in Test AV (p<0.001). Accuracy in defining the chamber of origin increased from 75.8% to 89.6% with the atrial data (p<0.001). Across all reviewers, confidence was significantly greater when the reviewer was correct. Overall mean confidence was greater in Test AV. The odds of a correct specific diagnosis were linearly related to greater confidence in both Test V and AV. Conclusions: The addition of the atrial electrogram allows for improved accuracy for both the specific tachycardia diagnosis and the chamber of origin. Clinician confidence was also enhanced and correlated with accuracy. Thus, the possibility of improved patient care through improved accuracy should be considered when evaluating a patient for a defibrillator.

1018-109 **A Prospective Analysis of Changes Stored Intracardiac Electrogram Morphologies After Implantable Cardioverter Defibrillators Shocks**

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Background: It is believed that analysis of stored intracardiac electrograms after implantable cardioverter-defibrillator (ICD) shocks is unreliable because of distortions of the electrogram morphology, though the duration and nature of these distortions is unknown. The objective of this study was to prospectively evaluate the effect of ICD shocks on stored intracardiac electrogram morphology and identify variables that may affect these changes. Methods: Twenty-four patients (70%male, 30% female) age 55±12 years undergoing predischarge or outpatient defibrillation threshold determination received 4 synchronized ICD shocks of 1, 11, 21, 31 Joules (J) at 3-minute intervals. All intracardiac electrograms were recorded from the shocking coils of a dual-coil ICD lead with inte-